

§§ 77.704-5 and 77.704-6. In addition, the insulated stick used by such person must have been designed for such purpose and must be adequately insulated and be maintained to protect such person from the voltage to which he is exposed.

**§ 77.704-11 Use of grounded messenger wires; ungrounded systems.**

Solely for purposes of grounding ungrounded high-voltage power systems, grounded messenger wires used to suspend the cables of such systems may be used as a grounding medium.

**§ 77.705 Guy wires; grounding.**

Guy wires from poles supporting high-voltage transmission lines shall be securely connected to the system ground or be provided with insulators installed near the pole end.

**Subpart I—Surface High-Voltage Distribution**

**§ 77.800 High-voltage circuits; circuit breakers.**

High-voltage circuits supplying power to portable or mobile equipment shall be protected by suitable circuit breakers of adequate interrupting capacity which are properly tested and maintained and equipped with devices to provide protection against under voltage, grounded phase, short circuit and overcurrent. High-voltage circuits supplying power to stationary equipment shall be protected against overloads by either a circuit breaker or fuses of the correct type and capacity.

**§ 77.800-1 Testing, examination, and maintenance of circuit breakers; procedures.**

(a) Circuit breakers and their auxiliary devices protecting high-voltage circuits to portable or mobile equipment shall be tested and examined at least once each month by a person qualified as provided in § 77.103.

(b) Tests shall include:

(1) Breaking continuity of the ground check conductor where ground check monitoring is used; and,

(2) Actuating any of the auxiliary protective relays.

(c) Examination shall include visual observation of all components of the

circuit breaker and its auxiliary devices, and such repairs or adjustments as are indicated by such tests and examinations shall be carried out immediately.

**§ 77.800-2 Testing, examination, and maintenance of circuit breakers; record.**

The operator shall maintain a written record of each test, examination, repair, or adjustment of all circuit breakers protecting high-voltage circuits. Such record shall be kept in a book approved by the Secretary.

**§ 77.801 Grounding resistors.**

The grounding resistor, where required, shall be of the proper ohmic value to limit the voltage drop in the grounding circuit external to the resistor to not more than 100 volts under fault conditions. The grounding resistor shall be rated for maximum fault current continuously and insulated from ground for a voltage equal to the phase-to-phase voltage of the system.

**§ 77.801-1 Grounding resistors; continuous current rating.**

The ground fault current rating of grounding resistors shall meet the "extended time rating" set forth in American Institute of Electrical Engineers, Standard No. 32.

**§ 77.802 Protection of high-voltage circuits; neutral grounding resistors; disconnecting devices.**

High-voltage circuits supplying portable or mobile equipment shall contain either a direct or derived neutral which shall be grounded through a suitable resistor at the source transformers, and a grounding circuit, originating at the grounded side of the grounding resistor, shall extend along with the power conductors and serve as a grounding conductor for the frames of all high-voltage equipment supplied power from that circuit, except that the Secretary or his authorized representative may permit other high-voltage circuits to feed stationary electrical equipment, if he finds that such exception will not pose a hazard to the miners. Disconnecting devices shall be installed and so equipped or designed in